

Comments to the United States Environmental Protection Agency's Scientific
Advisory Board (SAB)

June 14, 2016, Alexandria, Virginia

Good morning. My name is Carl Carlson. I am employed by Range Resources – Appalachia, LLC, a leading U.S. natural gas producer. Our company is the most active developer of the Marcellus Shale in Pennsylvania where we have drilled over 1,000 horizontal shale wells.

I am here today to offer comments on the SAB draft letter to EPA Administrator McCarthy dated April 26, 2016 which summarizes its technical review of the EPA's Draft Assessment of Hydraulic Fracturing.

EPA expanded the scope of its assessment well beyond the language of the 2009 Congressional mandate to cover not simply the hydraulic fracturing process, but the life cycle of water and chemical additive sourcing, handling, reuse and disposal. EPA estimates that 25,000 – 30,000 wells were hydraulically fractured in the U.S. between 2011 and 2014. It is not possible for a study to incorporate a detailed analysis of each of these individual wells. In the alternative, EPA chose to identify the processes typically used by oil and gas operators and to evaluate whether those processes represent risks drinking water resources. Regardless of its shortcomings, it is clear that EPA has considered an enormous amount of information from many sources since the assessment commenced five years ago.

SAB's draft review letter suggests that the 599-page assessment did not include sufficient details of localized, minor impacts and investigations that found no impacts. The top two concerns expressed in the draft SAB review letter were that: 1) EPA did not conduct planned prospective studies of hydraulic fracturing; and 2) concern with EPA's top line finding concerning the limited scope of confirmed impacts.

Concerning the failure to conduct prospective studies, we believe that the mere two planned study sites would not have provided a representative sampling useful in drawing valid conclusions. Because of rebuttable presumption regulations for water supply contamination in many states, the industry has sampled hundreds of thousands of drinking water supplies prior to drilling, each of which can be used as a prospective study for analysis of impact. State regulatory agencies have investigated thousands of water supply complaints related to drilling and hydraulic fracturing which have resulted in very small numbers of minor impacts, none of which were caused directly by hydraulic fracturing.

Of greater concern is the SAB's objection to the EPA's top line finding that *"We did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States."* SAB suggests that the term "mechanism" and the adjectives "widespread" and "systemic" are not well defined. These criticisms seem less about SAB's congressional mandate to provide scientific advice to the Agency and more about responding to special interest groups who want to spin statements from the draft report to advance their own agendas. EPA clearly described the mechanisms that were evaluated in the assessment, and the sources of information it reviewed. The systems that EPA evaluated were clearly those that contain drinking water resources, being surface water and groundwater. EPA further qualified its top line finding with a discussion of the assessment's limitations.

The fact is that more than 1 million wells have been hydraulically fractured in the U.S. since the process was developed over 60 years ago. States have effectively regulated the majority of the historic activity. It is well known that activities such as improper construction of oil and gas wells and surface spills of various fluids can and have caused localized impacts to drinking water resources. Because of

improved technology and enhanced state regulations, such impacts have become far fewer than several decades ago. The advent of large volume hydraulic fracturing required to produce gas from shales has brought several new challenges over the past decade. State regulators and industry, encouraged by a concerned public, have fostered improved techniques that have unquestionably reduced risks of environmental impacts from hydraulic fracturing-related activities. In many respects, EPA's assessment is already out-of-date, as rapidly evolving technologies continue to drive down the already minor risk of environmental impacts from oil and gas development.

We believe that the potential impacts of hydraulic fracturing on drinking water resources are well understood, are neither widespread nor systemic, and that the risk of impacts will continue to diminish as state regulations and industry practices continue to evolve. We support the dissenting view attached as Appendix B to the SAB draft letter along with the extensive comments previously provided by IPAA and API on both the EPA study and the SAB's review of the same. We urge the SAB to limit its review of EPA's draft assessment to technical errors or omissions.

Thank you for considering our comments.

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